



US Army Corps  
of Engineers®

# Engineer Update

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## \$4.2 billion budgeted for civil works

President Clinton's budget transmitted to Congress on Feb. 1 included \$4.2 billion for the U.S. Army Corps of Engineers' civil works program. The program will require appropriation of \$3.9 billion, with the remainder financed from non-federal contributions and trust fund receipts.

Funding in this request will be used to continue the sound development of the nation's water resources; the efficient operation, maintenance, and management of the nation's navigation, flood damage reduction, and multiple-purpose projects; the equitable regulation of wetlands; and the restoration of important environmental resources such as the South Florida Ecosystem.

Dr. Joseph Westphal, Assistant Secretary of the Army (Civil Works), said the budget spending level for fiscal year 2000 (FY00) "is consistent with the President's overall domestic priorities and continued commitment to a balanced budget. The funds available for civil works will provide a balanced program of investment in existing infrastructure, and in new projects and programs."

Accompanying this budget request is a proposal to establish a Harbor Services User Fee and Harbor Services Fund. "The Harbor Services Fund will allow for near-optimal funding of construction, operation, and maintenance activities at our nation's ports and harbors, and investment in four new navigation projects," Westphal said.

Under this proposal, fees would be charged to vessels transiting U.S. harbors. These receipts would be placed in the Harbor Services Fund and would be available the following fiscal year for appropriation to fund construction, operation and maintenance of the nation's channels and harbors. The existing Harbor Maintenance Tax and Harbor Maintenance Trust Fund would be repealed, and the remaining balance of the Harbor Maintenance Trust Fund would be deposited in the new fund. The budget proposes to appropriate more than \$950 million from the fund in FY00, with more than \$257 million applied to port improvement construction and more than \$692 million to fund operation and maintenance requirements.

### Projects and studies

The FY00 budget requires funding of \$3.9 billion, which is estimated to result in FY00 outlays of \$4 billion. "Funding is proposed to continue the sound development of the nation's water resources; the efficient operation, maintenance and management of the nation's navigation, flood damage reduction, and multiple-purpose projects; the equitable regulation of wetlands, and the restoration of important environmental resources, such as the South Florida Ecosystem," Westphal said.

The new investment program includes \$80 million in federal funding and includes one reconnaissance study, 19 new construction starts (two environmental projects, seven major rehabilitation projects, two dam safety assurance projects, three flood control projects, five navigation projects), and the proposed Challenge 21 Riverine Ecosystem Restoration and Flood Hazard Mitigation initiative.

The reconnaissance study, funded at \$100,000, is the Santa Ynez River, Calif. The construction projects are the Willamette River Temperature Control, Ore.;



The civil works program has been budgeted for \$4.2 billion in fiscal year 2000. Appropriations will be \$3.9 billion; the remainder will be financed from non-federal contributions and trust fund receipts. (Photo by F.T. Eyre, Headquarters. Gold courtesy of Thomas Cook Currency Services, Inc.)

Cheyenne River Habitat Restoration, S.D.; the Napa River, Calif.; Grand Forks, N.D. and East Grand Forks, Minn.; the Arecibo River, Puerto Rico; the Santa Barbara Harbor, Calif.; Kikiaola Small Boat Harbor, Kauai, Hawaii; Port Fourchon, La.; Baltimore Harbor and Channels, Md.; and the Neches River and Tributaries Saltwater Barrier, Texas. The major rehabilitation projects are the Walter F. George Powerhouse and Dam, Ala. and Ga.; Lock and Dam 12 on the Mississippi River, Iowa; Lock and Dam 24, Part 2, on the Mississippi River, Ill. and Mo.; Patoka Lake, Ind.; Cape Cod Canal Railroad Bridge, Mass.; John H. Kerr Dam and Reservoir, Va. and N.C.; and the London Locks and Dam, Kanawha River, W.V. The dam safety assurance projects are Success Dam, Calif., and Bluestone Lake, W.V.

### Challenge 21

"The Challenge 21 initiative will plan and implement projects that restore riverine ecosystems while mitigating flood hazards for communities," Westphal said. "Priorities for the initiative will be developed in partnership with other federal agencies and non-federal public entities."

The total cost of this new investment program is \$1.8 billion, of which \$520 million would be paid by non-federal sponsors. Also provided is \$129 million for Everglades restoration and \$100 million to continue the Columbia River Fish Mitigation program in the Pacific Northwest. In addition, operation and maintenance of hydropower facilities in the Pacific Northwest would be directly financed by a transfer of about \$107 million from Bonneville Power Administration revenues.

A breakdown of the budget accounts follows:

**General Investigation** — \$135 million (funds studies, design, coordination, data collection and research and development).

**Construction General** — \$1.24 billion (funds project construction and major rehabilitation).

**Operation and Maintenance, General** — \$1.836 billion (funds running and upkeep of existing projects including hydropower facilities, locks and dams, recreation areas, and navigable waterways).

**Regulatory Program** — \$117 million (funds the Corps permit program for dredge and fill material in the waters of the U.S., partially offset by \$7 million from permit fees which is dependent upon enactment of proposed legislation).

**Flood Control, Mississippi River and Tributaries** — \$280 million (funds the study, design construction, operation and maintenance for water resources projects in the alluvial valley of the Mississippi River).

**General Expenses** — \$148 million (funds for the executive direction and management of the Corps Headquarters and major subordinate commands).

**Formerly Utilized Sites Remedial Action Program** — \$150 million to manage the program transferred to the Corps from the Department of Energy by the Energy and Water Appropriations Act of 1998.

Details of the FY00 Civil Works Budget, including state-by-state information, are available by selecting Programs Management at the Civil Works Directorate World Wide Web site: [www.usace.army.mil/inet/functions/cw](http://www.usace.army.mil/inet/functions/cw).

(Becki Dobyns of the Headquarters Public Affairs Office, and members of the Office of the Assistant Secretary of the Army (Civil Works) contributed to this article.)



## Chaplain's Corner

# Change is part of living; learn to accept, embrace it

By Chaplain (Lt. Col.) Tim Carlson  
Headquarters

I just came from Missouri, so I remember the Ozark saying, "If you don't like the weather, just wait a couple of hours and it'll surely change." It seems that change is now a constant theme in our culture. Certainly, most large organizations in America, including the U.S. Army Corps of Engineers, are responding to change. Is it possible for people and their organization to experience change without getting into the usual morass of "God, ain't it awful" and "This will kill us for sure" responses?

I'm going to go out on a limb and make a few suggestions that could benefit the Corps during the next few months.

- Accept the reality of change as a normal phenomenon of life. Good examples would be our children. How soon I am a grandpa! How soon my family of six kids has shrunk to four and soon to three. How quickly my little Annalisa has become a young lady and not a little girl consumed with dolls and child's play.

- Allow change to be an opportunity to look back. Why? Looking back permits a snapshot of the recent journey. Often, this snapshot will highlight the positive accomplishments that one might have temporarily forgotten.

Most officers do this about once a year. It comes time for a new Officers Evaluation Report (OER), and into their files they go. What are they seeking? They are looking at recent reports and doing everything in their power to believe that someone finally put into words their true worth. More than that, they are posturing themselves for the future. They are hoping, often with good reason, that the change of rater and the new OER will continue their career progression. One thing is certain -- their looking back allows them to increase their appreciation of their tremendous value to the U.S. Army and, for Corps members, their value to the Corps.

- Accepting change also allows us to look inward. In a world obsessed with production and products, it is important to ponder one's true feelings about a world that was created for change. Each year most states experience the metamorphosis of snow, thawing, emerging leaves, ripening grain, harvest, and

autumn leaves. God designed us to see that our world is changing. He ingrained within us a restlessness that makes sameness unacceptable and constancy an affront to vitality and accomplishment of vision.

- Accepting change allows us to look outward. The self-centered inclination that haunts all of us often clouds our ability to see the progress of others in the workplace. It is easy to overlook the readiness of a subordinate for a promotion. Accepting early the normalcy of change will help all of us better visualize our great organization as a growing organism developing and stretching into maturity and even into the next millennia.

- Accepting change invites us to look upward. As necessary and positive as change can be, it is important to admit that change hurts. Even reaching adulthood, although delightful in many ways, means a new era when economic dependency must be left behind for earning an income for which you alone are responsible.

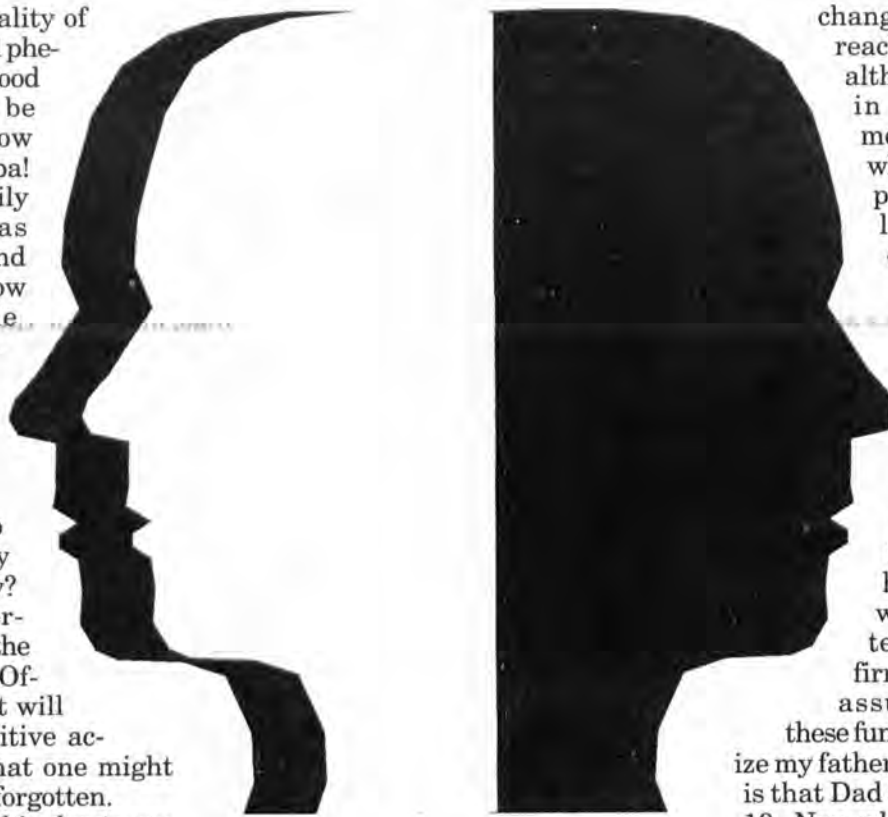
What does this have to do with looking upward? As the pain of change comes, it is important to have someone who will hear, listen, comfort, affirm, guide, and reassure. Many of these functions characterize my father. The only catch is that Dad died when I was 19. Now what?

That "what" is my invitation to all of us in the Corps. I have found a loving, eternal Heavenly Father who welcomes all of His children and eagerly awaits our dialogue with Him. In His amazing changelessness, He understands change. He yearns to share our fears and uncertainties, and to give us vigor for new chapters of life unknown to us, but totally known to Him.

I am not the Bottom Up Review guru. I have not thoroughly studied our organization and determined who might stay, who might join us, and who might leave. But I do know One who says, "Come unto me, all you who labor and are heavy laden, and I will give you rest. Take my yoke upon you and learn from me, for my yoke is easy and my burden is light."

That promise gives me hope. It tells me that it will be all right.

Press on. God will take care of you!



## Corps center gets USAF runway work

By Tamara Barry  
Northwestern Division

For the past 10 years, the Corps' Transportation Systems Mandatory Center of Expertise (TSMCX) in Omaha District has reviewed all Corps airfield pavement designs for the Air Force and Army. TSMCX's duties recently expanded to include the Air Mobility Command (AMC).

AMC asked TSMCX to review all airfield pavement designs with a value of more than \$1 million done by Corps, Air Force, Navy, and contract architecture and engineering firms. AMC expects that using TSMCX to review major airfield pavement projects will improve construction quality, limit contract modifications, reduce construction costs, and decrease maintenance costs.

Os Keifer in Northwestern Division is responsible for the final review of all design and construction of airfield pavement for the Army and the Air Force in South Pacific Division, Pacific Ocean Division, and the North Pacific Region of Northwestern Division. The remainder of AMC projects are supported by TSMCX Omaha, headed by Terry Sherman, Director. Keifer says the new AMC directive not only gives more work to the Corps, but is also a solid show of satisfaction with Corps work.

Ken Hevner, a pavement engineer with AMC, convinced his commander and senior management of the value of having TSMCX perform all reviews. "We made the decision that a good review is not a cost but a savings to us," Hevner said.

Hevner is impressed with the Corps' work, its broad base of expertise, and convenient access.

"The Corps is very technically competent and we'll get consistency in all their reviews," Hevner said. "They understand the Air Force mission and way of doing business."

Besides performing technical design reviews for AMC, TSMCX also provides technical consulting services during design and construction of bigger airfield pavement projects, including repair projects. Hevner anticipates TSMCX's work for AMC to increase in the future as the working relationship develops. "We'll be taking advantage of each other's expertise," he said.



The Transportation Systems Mandatory Center of Expertise supports operations like these at Travis Air Force Base, Calif. (Photo courtesy of the U.S. Air Force)





# 'Thank you for being here' in Honduras

By Candace Hull  
New Orleans District

Three engineers from New Orleans District spent their holidays in Honduras to assist in a relief effort following Hurricane Mitch.

On November 19, three weeks after the storm, Stephen Martinez, Robert Culbertson, and David Wurtzel arrived in Honduras, not knowing exactly what to expect once their plane landed.

"Total shock," said Wurtzel, describing his first impressions of the devastation. "It was phenomenal. You wonder how people could have ever survived."

But people did survive, and the engineers faced the awesome task of helping restore some semblance of normalcy to the country. The New Orleans District engineers served as advisors, in cooperation with other U.S. Army Corps of Engineers employees from across the U.S.; the U.S. embassy in Honduras; the Soptravi, Honduras' Civil Works Department; Waterways Experiment Station (WES); and the area's civil engineer.

Martinez, whose parents are from Honduras, made an instant decision to join the relief effort. He did a lot of translating, helping the team overcome the language barrier. "The people of Honduras were very happy to be able to speak to the Corps and communicate their thoughts and experiences," said Martinez. He worked with a team of construction and hydraulic engineers to analyze the damage and make recommendations for repairs. The team traveled to Guatemala, Nicaragua, and Honduras, and assessed dam-



Hurricane Mitch totally devastated El Berrinche in Tegucigalpa, Honduras. (Photo courtesy of New Orleans District)

ages to a dam structure, a river basin, and bridges.

Wurtzel worked exclusively in El Berrinche, a section of Honduras' capital, Tegucigalpa. Ironically, "El Berrinche" means "just a mess." A landslide created a barrier dike and a lake. The lake became contaminated with raw sewage, a breeding ground for disease, prompting Wurtzel to organize a slide-monitoring program, on the recommendation of WES slide expert, Dr. Lawson Smith.

Wurtzel implemented a plan created by WES engineer Glynn Banks. By

placing five survey lines alongside the mountain, engineers could acquire data to indicate position changes on the mountain. They also determined the best way to excavate and lower water at the dike, which had been a persistent health concern.

"It's seat-of-your-pants engineering," said Wurtzel, noting that field observations substituted for engineering data that would have been acquired under normal circumstances. "It's engineering based on experience, engineering based on making the best of the situation."

Wurtzel said the mission to Central America was successful thanks to team effort. He and Martinez also attribute their success, in part, to the U.S. armed forces, with whom they interacted frequently. Corps delegates to Central America say that, although there remains a lot to be done, they have at least helped Honduran communities get off to a good start.

Hondurans are already beginning to rebuild their homes, according to Martinez. "It's just like an army of ants," he said, noting the people's resilience and determination.

Martinez said he was glad to go back to Central America and help out. "I felt it was something I had to be a part of because of my background. It was a return to the place where I had been introduced to the Corps as an 11-year-old boy," said Martinez. His mother began her career with the Corps in Honduras.

"It's been very rewarding," Wurtzel said. "For me to miss New Year's and Christmas is not a big deal...it gave me an opportunity to give back to people." Wurtzel also said he is pleased that the project he spearheaded contributed to the safety of the people in Tegucigalpa.

Wurtzel said he learned two things from the experience -- heed storm warnings, and value the important things in life.

"Americans are so spoiled...take away our coffee in the morning and we have a riot," Wurtzel said, in contrast to the grateful, humble way of the Hondurans. He said they often said to him and the other workers, "Thank you for being here."

## Huntsville gets missile defense design work

By Kim Gillespie  
Engineering and Support Center, Huntsville

The Ballistic Missile Defense Organization has selected the U.S. Army Corps of Engineers to handle facilities design and construction work for the National Missile Defense program. The two organizations signed the official charter on Dec. 15. Corps Headquarters selected the U.S. Army Engineering and Support Center, Huntsville, as the National Missile Defense Program Manager.

The National Missile Defense Program is intended to defend against limited attack by intercontinental ballistic missiles (ICBMs) that could be aimed at the U.S. in the future.

The Corps' involvement includes design work for potential missile interceptor facility sites in two locations, and radar sites also in two other potential locations. The work will ultimately include building the facilities at the sites selected. Estimated funding for the work, which will include other Corps' offices, is expected to be from \$500 million to \$750 million during four to five years.

"The charter only formalized the long-standing commitment that the Corps has made to support the testing and deployment of the National Missile Defense System," said John Romeo, program manager.

Huntsville Center has a long history with the Ballistic Missile Defense Program.

The center was originally conceived to design and

build facilities for the Army's Sentinel/Safeguard Ballistic Missile Defense System in the late 1960s. Although the Sentinel mission gradually diminished, Huntsville Center has remained active in the Ballistic Missile Defense Program for more than three decades.

In 1992, Corps Headquarters appointed Huntsville Center the program manager for all Corps support throughout the life cycle of the program.

Huntsville Center will maintain the design role and retain the lead for Corps actions, while other Corps offices will provide specialized technical expertise and building management services. Plans for potential facility sites in both North Dakota and Alaska are being considered for development. The Corps' geographic districts will continue their traditional role, meaning both Omaha and Alaska districts will be partners with Huntsville in the design phase and will provide construction services in their areas.

After the facility requirements are finalized and construction is approved to proceed, Huntsville Center will continue to be the "One Door to the Corps" for the Ballistic Missile Defense Organization and the National Missile Defense Program, but the local geographic district will manage construction.



The Huntsville Center has played a role in the missile defense program throughout its history. (Artist's conception courtesy of Huntsville Center)

"The construction oversight provided by the responsible district will definitely mean an increased workload and funding for that district," said John Romeo. The Cold Regions Research and Engineering Laboratory also will provide expertise in developing both facilities.



# 'It's a blessing'

## Airmen, families love Corps-built housing at Pope Air Force Base

Article by Alicia Gregory  
Photo by Jonas Jordan  
Savannah District

"I was worried the house would be too small, but when we walked through it my wife, Dalicia, said there was plenty of room," said Staff Sgt. Robert Hunter, a munitions storage crew chief with the 23rd Maintenance Squadron at Pope Air Force Base, N.C. His family was moving from a 1,600-square-foot rental house to on-base housing.

"We're excited to move on base and get brand-new housing; it's a blessing," said Dalicia. "I have never been to a new housing development where they actually landscaped the yards. And I think the two-car driveway is great."

"I love having the elementary school so close," said Robert. "It's nice having the youth center so close, too." The Hunter's seven-year-old son, Devon, currently attends the after-school program at the youth center and began attending the Pope school after Christmas.

What the Hunters are talking about is a big Christmas present from the U.S. Air Force and the U.S. Army Corps of Engineers. Just before Christmas, the Hunters and seven other Air Force families moved into the first units of Woodland Heights, the newest housing for junior enlisted families at Pope. The four buildings are the first of 84 duplexes, a total of 168 two-story units being built at Pope for junior enlisted airmen. Savannah District has oversight on the \$18 million design/build project for the base.

Woodland Heights features spacious yards, sidewalk-lined streets, and a jogging trail that circles the large neighborhood. The first four duplexes, or eight units, were ready for occupancy in early December to kick-off the Air Mobility Command's "Year of the Family."

The command's focus is on enhancing family programs and it has allocated dollars depending on a base's particular need. "Right now, we have 428 houses on the base and about 5,200 people, so there's a big need, particularly for the junior enlisted families," said Col. Steven Acuff, 43rd Airlift Wing vice commander. More than 70 percent of the Air Force is married, making housing a top priority. "We have 370 to 400 people on our waiting list and the waiting period is in excess of two years."

"This was the worst place to get housing," said Lynn Ferry, wife of Senior Airman Mike Ferry, a C-130 loadmaster. "Everywhere I lived growing up as an Air Force dependent, housing was always available."

"Most places, it (the waiting list) is six months to a year; here it's two-and-a-half years," said Penny Richards, wife of Staff Sgt. Michael Richards, a maintenance quality inspector with the 23rd Fighter Group. "This new housing should help out a lot."



Staff Sgt. Robert Hunter, his wife Dalicia, and their son Devon pose in front of their new home at Pope Air Force Base as movers carry in their furniture.

Both women and their families recently moved into the new housing area. Eight families moved into the recently opened two-bedroom duplexes. The \$18 million family housing being built by McKnight Construction will be delivered in three phases. The next phase of 82 units (41 duplexes) was completed in February. The last 78 units (39 duplexes) is scheduled for occupancy next October.

As part of a design/build contract, McKnight Construction engaged the engineering firm of Johnson, Laschober & Associates and the architectural firm of Cromwell and Associates to design the housing. The design for the 168 two-story units is based on two different floor plans, each including a one-car garage, one-and-a-half bathrooms, and two bedrooms.

"Families traditionally make a lot of changes as they start building their homes," said Brig. Gen. David Johnson, 43rd Airlift Wing commander. "But we decided, with the concurrence of

McKnight, to build eight units and check them out, then lock-in the design configuration."

A team of Air Force spouses and Pope civil engineers toured a furnished house and changes were made based on their comments. The changes included the placement of switches and cable television hookups, and adding carpeting in the master bedroom and the stairs.

Each unit is about 1,000 square feet, not including the garage. They will have neutral-colored vinyl siding, with brick accents. Amenities include a dishwasher, self-cleaning gas oven, laundry room with washer and dryer hookups, double-bowl sink with disposal, and a 21-cubic-foot refrigerator.

"Although the Air Force standard is a one-car garage, we widened the driveway, knowing that most families have two cars, and it gave them a place to park their second vehicle," said Bob Oenbrink, Savannah District's project engineer for the housing. "McKnight

has really bent over backwards to give us a few extras. We added extra cable television and phone outlets to give families more flexibility in arranging rooms. And we put in more mailboxes to position them closer to most homes.

"Most of the added costs were for environmental impact changes," said Oenbrink.

"The project was 100 percent designed when we discovered an error in the environmental assessment," said Douglas Plachy, the district's senior project manager for Pope Air Force Base. "There was a lot more wetlands on the property than anticipated. The wetlands essentially cut through the subdivision. We all (representatives from Savannah District, the contractor, the major command and Pope Air Force Base) sat around a table with cutouts of houses trying to figure out a way to set up the new housing area. Once we were in agreement, the contractor gave the plan to the A-E firm and said, 'draw it up'. It turned out to be a nicer design."

The wetlands divided the subdivision into two sections. "This turned out to be a plus," said Oenbrink. "The environmental break keeps it from seeming quite so massive. We have what we call a south side and a north side and the jogging trail will have a bridge that spans the wetlands and connects the two sides."

Besides the jogging trail, there will be six playgrounds, four basketball courts, and several covered bus shelters. Pope Elementary School, the Child Development Center, and the Youth Center are all within walking distance of the new housing.

For these families, the pleasure of getting into housing before Christmas had more to do with finances than holiday celebrations. "With Variable Housing Allowance I get \$560 a month to pay for off-post housing," said Staff Sgt. Kevin Michaud, an A-10 crew chief with the 74th Fighter Squadron. "My rent started at \$600, then went to \$630, and they wanted to raise it to \$692, plus utilities! That's a lot of money coming out of my paycheck."

"This has helped us money-wise, but I also feel a lot safer here," said Penny.

"We lived in a terrible neighborhood, but you have to live where you can afford to live," said Lynn. "Sometimes what you can afford is not the greatest."

Families are moving into a secure, patrolled area on the base. "This is nice because you have control of the neighborhoods and the military police will keep people out of the area who are not supposed to be here," said Michaud.

"Living off-post is different from being on-base where there is community," said Senior Airman Ursula Lee, a public affairs specialist with the 43rd Airlift Wing. She and her family moved into the new housing in February. "You are living next to people you work with."



# Seattle designing aerial training range

## Project provides nearby training for expeditionary wing

By Patricia Graesser  
Seattle District

Seattle District is in the midst of a highly visible project for the Air Force to develop a training range south of Mountain Home Air Force Base in Idaho.

As the Air Force's rapid response air expeditionary wing, Mountain Home's 366th Wing's mission is to deploy to a potential or ongoing conflict and neutralize enemy forces. It must maintain an exceptionally high level of training to remain effective, and the closer that training reflects combat conditions, the better prepared the wing will be to fight.

### More training, less cost

"The larger space provided through Enhanced Training in Idaho (ETI) will offer Air Force pilots realistic aerial training and provide needed flexibility," said Capt. James Law with the 366th. "It will also allow for more effective use of limited flying hours, since flying in the skies near Mountain Home AFB provides greater training at less cost than using ranges further away."

The district manages design, construction, and real estate actions for ETI. Phase I of the three-phase project includes rancher mitigation payments, fencing withdrawn lands, building one-quarter-acre emitter sites, developing a 640-acre area of no-drop target sites, and two surface-to-air missile target sites.

The ETI proposal became reality this fall when the 1999 Defense Authorization Bill passed, authorizing the Air Force to develop the tactical training range and to withdraw 12,000 acres of public land in southern Idaho.

### Real estate work

The district studied the value of the expansion area and assisted the Air Force in negotiations with those affected by the land withdrawal. Real Estate worked closely with base staff to ensure that the rancher mitigation issues were resolved quickly and legally. The Air Force reached an agreement with two affected ranchers to compensate them for interruptions in their ranching operations and for lost grazing privileges on what has been Bureau of Land Management (BLM) and state property.

### Complexities

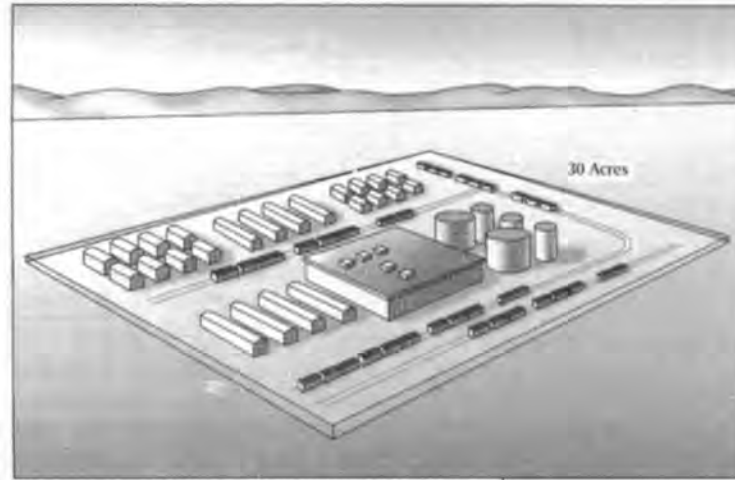
Local newspapers covered the story for months, with public debate about grazing rights, public property, and possible impacts to the natural and cultural environment.

"This project is typical of the increasing complexity of construction projects that involve public lands," said project manager Dave Garton.

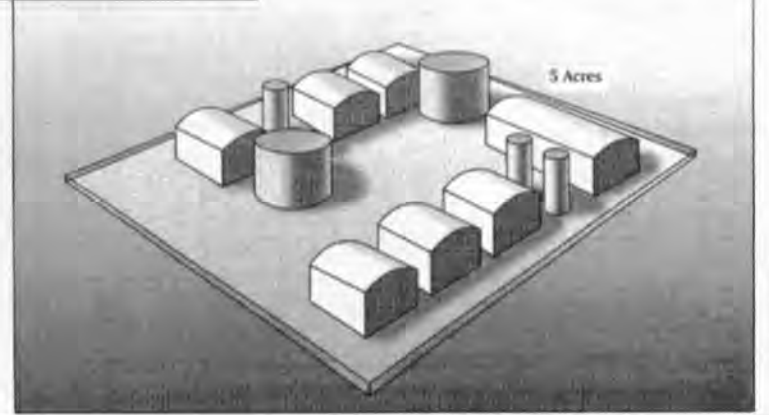
Once property is withdrawn and rights transferred, Seattle District can begin Phase I construction, planned for this spring. Design is complete and an 8-A contract is being negotiated for site development, access roads, and fencing.

"The project is complex due to the number of entities involved," said John Dirkman, Mountain Home Project Manager Forward. "We're partnering with many diverse agencies in addition to the Air Force."

Idaho Power is providing power to the sites, the Military Traffic Management Command is working



The simulated industrial target within the 12,000-acre tactical range would include structures that, from the air, look like an industrial area with a rail yard.



This illustration is representative of a five-acre no-drop industrial target.

**Alternative D, Juniper Butte**  
If this alternative were selected, the Air Force proposes to withdraw approximately 11,269 acres of public land, as follows:

- 10,600 acres for the Juniper Butte Alternative
- the 640-acre no-drop target area
- four five-acre no-drop target areas
- nine one-acre emitter sites

In addition, 15 one-quarter-acre emitter sites and access roads are on public lands managed by the BLM. The right to use these would be obtained through rights-of-way.

State of Idaho land that would be leased by the Air Force from the Department of Lands includes:

- 960 acres within the Juniper Butte training range
- one one-acre and two one-quarter-acre emitter sites

Juniper Butte would have 62 miles of gravel road improvements and 20 miles of new gravel roads.

Electricity would come from a 208-volt, three-phase transmission line linked to the main transmission line, which is located roughly 16 miles to the southeast of Juniper Butte.



training range, a 640-acre no-drop site, four five-acre no-drop sites, 10 one-acre mobile emitter sites, and 20 one-quarter-acre mobile emitter sites.

### Realistic targets

Ultimately, four target complexes will be built in the tactical range. One will be a simulated industrial target and two will be simulated surface-to-air missile targets. The fourth will contain tanks and vehicles. At the drop sites, the crews will drop 25-pound non-explosive training bombs.

The Corps will also build a three-acre maintenance facility on the tactical range.

Five fenced no-drop targets will be built at other sites. Four five-acre no-drop targets will consist of simulated surface-to-air missiles, simulated early warning radar, and two small simulated industrial complexes. One 640-acre site will contain about 200 life-size battle tanks and other vehicles, which can be rearranged to provide varied target configurations.

### Emitter sites

The 10 one-acre and 20 one-quarter-acre emitter sites will be geographically separate. One-acre sites will be fenced and include an above-ground emitter, fuel tank, 400-square foot building, and 40-foot antenna. Quarter-acre sites will contain a gravel surfaced parking spot and driveway to allow the mobile emitters to be moved onto any of them.

The range squadron will move emitter trucks periodically to the various sites during exercises at the new range. The emitter trucks simulate enemy radar and weapons such as surface-to-air missiles. Aircraft crew performance will be monitored during each exercise at the new range and scored based on target acquisition and avoiding enemy defenses.

This cohesive training complex, made up of conventional and tactical training ranges, threat emitters, and supporting airspace, will let the Air Force develop training scenarios that realistically reflect battlefield conditions. The flexibility of the ETI design will provide greater potential to keep pace with the evolution of future combat tactics than any range the 366th now uses.

through the Federal Highway Administration to repair a bridge, and the Three-Creek Good Road District is doing other road work.

The state and BLM have also been involved in the project, as have the Shoshone-Paiute Tribes, ranchers, Owyhee County Highway District, and the Idaho resource agencies, governor's office, and state historic preservation office.

Dirkman and Garton have been working together and with the whole team to move forward despite the complexity of the first phase work. The project has been "a multi-disciplinary effort involving Design, PM, Construction, Contracting, Real Estate, Counsel, ERS and others," said Garton. "It has included so many people that it's difficult to name them all."

In about four years, when all three phases are complete, the Air Force will have a 12,000-acre tactical



# NED cleans up former Navy disposal site

By Ann Marie Reyes  
New England District

As part of the Defense Environmental Restoration Program (DERP), New England District is cleaning up a former U.S. Navy disposal site. The Blue Beach Disposal Site is situated in the southwest portion of the former Quonset Point Naval Air Station in North Kingstown, R.I. The 15-acre parcel, owned by the Rhode Island Economic Development Corporation (RIEDC), consists of a fenced RIEDC salvage yard and the adjacent beachfront recreation.

Work on the project includes:

- Excavating about one foot of soil contaminated by polychlorinated biphenyls and disposing of it off-site.

- Excavating about one foot of soil contaminated by polynuclear aromatic hydrocarbons and disposing of it off-site.

- Excavating contaminated soil and buried debris from one area and consolidating it on top of and beside another contaminated area.

- Covering the contaminated soil and debris with a pavement cover.

- Installing a new monitoring well and two piezometers.

Future work includes instituting a



This metal object was one of many removed from the Blue Beach Disposal Site. (Photo courtesy of the Southeast Resident office)

monitoring program to evaluate the migration of a trichloroethylene plume.

Some of the debris found at the site during excavation of contaminated soil include various empty, crushed bomb casings; an empty aerial flare; empty rocket motors; an air retardation fin assembly; an empty, crushed rocket launcher; an empty practice mine; sev-

eral drums; hundreds of cylinders; boxes of bottled acid; and large quantities of cable.

The district's contractor, Environmental Chemical Corporation, is performing the work under a \$10 million remedial action contract awarded through the small and disadvantaged business program managed by the

Small Business Administration. Delivery orders are issued against this blanket order to expedite environmental cleanup projects. The cost of the job is currently about \$2 million.

The Blue Beach site was originally part of the Quonset Point Naval Air Station (NAS) from about 1940 to 1974. Before construction of the NAS, the land was farm and residential land.

In 1974 the NAS was decommissioned and the land taken over by the RIEDC for development as an industrial park. General Dynamics' Electric Boat Division once leased the beachfront portion of the site for recreational use. The RIEDC used the rest of the site as a salvage yard for miscellaneous materials.

Blue Beach is being cleaned up under the DERP which provides for an expanded effort in environmental restoration. It emphasizes the identification, investigation, and prompt cleanup of hazardous and toxic waste, unexploded ordnance, buildings, and other structures and debris at current and former military facilities.

A total of 85 formerly used defense sites have been identified in Rhode Island. Investigations at all 85 sites are now complete, including 53 where no work was necessary.

## Ordnance removed by remote control

By Kim Gillespie  
Engineering and Support Center, Huntsville

Finding the unexpected can sometimes lead to new and better methods. The U.S. Army Engineer and Support Center, Huntsville, found more ordnance than expected at Jefferson Proving Ground (JPG), Ind., a Base Realignment and Closure (BRAC) site.

"By working together with the customers (the U.S. Army Test and Evaluation Command and Louisville District), the contractor, and other Department of Defense ordnance experts, we found the best methods to address the problem," said Glenn Earhart, ordnance manager for Huntsville Center, the U.S. Army Corps of Engineers' Center of Expertise for Ordnance and Explosives.

Huntsville Center has conducted an ordnance investigation and cleanup for JPG since 1996. Last fall, the contractor encountered a mortar field contaminated with substantially more ordnance than anticipated. The 43-acre area is estimated to contain more than 20,000 60mm and 81mm mortar rounds.

"Our primary concern is, of course, safety, because of the density of contamination in this small area," said Earhart. "But anytime you encounter a large amount of ordnance like this, you are also talking about significant cost and schedule increases."

Continuing with the original plan of using two dig teams and a demolition team was still an alternative, but two other methods were also considered. The Air Force offered a remote controlled excavator (backhoe), while the Marine Corps offered a remote controlled bulldozer.

Huntsville's people ultimately selected the remote controlled excavator. "The 'dozer rolled the soil into layers, while the excavator allowed the operator to loosen soil and reveal the ordnance without additional sorting through soil mounds the 'dozer would



A contractor watches the video monitor intently as he operates the excavator by remote control. (Photo courtesy of Huntsville Center)

have required," said Earhart. "But both pieces of equipment offered some advantages over just using the dig teams."

Dan Stephens, Deputy Director of Federal Programs for the contractor, UXB International, is a former Air Force explosive ordnance disposal specialist. He knew about the remote controlled excavator and suggested that it might work at the site. When contacted, the Air Force offered the excavator at no cost to the Army, but UXB's operators had to attend training at Tyndall Air Force Base, Fla.

Each excavator operator works a 30-minute shift on the controls. The controls are a joystick and a video monitor to observe the excavator arm at work. These are in a trailer about a quarter-mile from

the ordnance-contaminated work site. "The experience the operators are getting with a new technology is valuable," said Dennis Lecher, UXB's Senior UXO Supervisor.

The only adjustment the operators had to make was getting used to a control that does not let them feel the movement. "You really rely just on the visual feedback," said Lecher. "It's like driving a car and not being able to feel the brakes."

When the excavator finds mortar rounds, they are first identified, then a shaped charge is detonated on the mortars to ensure all explosive material is destroyed. (A shaped charge is a device that channels the explosion in one direction.) The rounds can then be discarded as scrap.

Using the excavator, the team cleared about 1,000 mortar rounds per week for a total of nearly 20,000 in 15 weeks. "If we had used a 24 person team clearing 800 mortars a week, it would take 25 weeks to clear 20,000 mortars at a cost of about \$70,000 per week," said Earhart. "Using the remotely operated excavator dropped the cost to about \$5,000 to \$6,000 per week."

Paul Cloud, the BRAC Environmental Coordinator for the Test and Evaluation Command, also praised the teamwork and results. "Our mission is to ensure the restoration of the facility is performed in the best way possible," said Cloud. "I feel like we got the safest and best technology available, and saving nearly \$65,000 a week is a real bonus to the taxpayers."

Using the excavator was not Earhart's only innovation. For other ordnance work at JPG, he used a fixed-price contract (still not common in the ordnance field) to maintain quality and save money.

"But I'm extremely proud of the excavator because it was truly a team effort," Earhart said. "We not only found a safe, cost-effective way to perform the work, we also gained some valuable experience that can be applied to other projects and sites."





# Align for Success

*Continuously evaluate and realign, as necessary, existing missions, systems, resources and organizations to reinforce our strategies.*

## Military Programs Reengineering

# Changes put expertise closer to customer

By Penelope Schmitt  
Installation Support Center

"We aim to embed the Corps in the working Army," said Maj. Gen. Milton Hunter, Director of Military Programs. A comprehensive plan to re-engineer the Military Programs Directorate and its associated organizations throughout the U.S. Army Corps of Engineers will cap a three-year program to revolutionize Corps support to the Army.

In the first year of Lt. Gen. Joe Ballard's tenure as Chief of Engineers, the Army conducted a series of video teleconferences between Corps leaders and Army Directors of Public Works (DPWs). The program expanded to include locating Corps district members with DPW staffs, establishing telecommunications between installations and supporting districts, and deploying direct-funded Corps-Forward staff members at key installations.

Now, a major restructuring will revolutionize the way Headquarters and other Corps agencies support Army installations.

### From the top

The reengineering effort is from the top down. It includes restructuring the Directorate of Military Programs in Headquarters. An Installation Support Division (ISD) will be added, made up of 40 key people mostly from the former Center for Public Works (CPW). They will oversee missions like installation business practices, DPW automated systems support, master planning and real property management, and training.

The other divisions in Military Programs will also change, emphasizing life-cycle management of Army installation facilities and infrastructure.

"The DPWs have been sending a clear message to us," Hunter said. "They want our continued support and assistance as they care for installations. We can no longer design and build facilities, hand over the keys, and consider our job complete."

All of Military Programs' divisions will include an operations and management component to provide Headquarters support for the day-to-day work of sustaining Army installations.

Engineering and Construction Division will add six people to support engineer management systems like RAILER, PAVER and ROOFER that help DPWs

manage major infrastructure systems cost-effectively. Support for ongoing maintenance of buildings, HVAC systems, and other similar operations and maintenance issues will be available.

Environmental Division will add staff to assist with ongoing environmental concerns like solid waste management, and water systems management on installations.



Programs Management Division has integrated its policy and programs branches into a single organization, and will take on support to the Federal Energy Management Program, including the DUERS/ADDS energy reporting system.

### A leaner organization

Do all these additions mean growth? No, when reengineering is complete by Aug. 30, the staffs will be *smaller*. For example, the 85-person Engineering and Construction Division will have only 56 members. The 172-person former Center for Public Works will contribute 35 of the ISD members, and other staff will see their jobs eliminated or dispersed throughout the Corps to perform installation support closer to the Army installations.

In all, the Military Programs staff in Headquarters will shrink by about 20 percent, and support will move to the field where the customer is.

"We are making an aggressive effort to ensure that all our people find a satisfying new start," said George Braun, Executive Director of the Installation Support Center (ISC).

The ISC is a transition organization. The CPW will be disbanded and its members distributed throughout the re-engineered Military Programs structure.

"Every week I get news that people have found placements, and I hope that by our close-out date, everyone will be somewhere that's good for them, whether that's enjoying retirement, a new position in the Corps or other federal

agency, or work in the private sector," Braun said.

"Most important for the Army, this reorganization has done a good job of preserving essential expertise and services that installation DPWs and major command engineer staffs rely on," Braun said. "We took a lot of trouble in the conceptual stages to consult our customers through national team meetings. I'm convinced we will be able to offer continuity of service through the Installation Support Offices and Installation Support Center of Expertise that we designed with the joint efforts of Corps and customer input."

### New installation support network

The most revolutionary feature of the reengineering plan is the Installation Support Center of Expertise (ISCX) being established by the Engineering and Support Center, Huntsville. The ISCX will continue to support certain central functions and services that were performed by the former Center for Public Works.

"The national team members were instrumental in establishing the ISCX," said Kristine Allaman, now Director of the Installation Support Center, and soon to be Chief of the Installation Support Division. "They wanted to ensure there was a place to go for critical functions that have long been performed centrally."

These functions include Army power procurement, utilities privatization, fire prevention and protection, supply and equipment fleet management, DPW automated systems support, and DPW training.

The Corps will also establish seven Installation Support Offices (ISO) in the field divisions. Fifty-six positions will be distributed among the divisions, with one each going to Mississippi Valley Division and Transatlantic Programs Center. Each ISO will be staffed with four to eight people who will facilitate installation support on a regional level.

"The way ISOs are structured will depend on decisions at division level," Allaman said. "Each region has unique missions and characteristics that will shape the ISOs."

The basic rules permit divisions to establish one primary location with up to five people, and a sec-

**Continued on page eight**





# Business centers

## Commanders have power to restructure divisions, offices

By Paul Seguin  
Headquarters

The new engineering circular EC 10-1-58, signed Jan. 11, outlines the U.S. Army Corps of Engineers' new policy of authorizing division commanders to restructure the division and district offices under their command.

Under the new guidance, restructuring must be done to:

- Improve service and responsiveness to the customer.
- Accomplish the mission more effectively and efficiently.
- Maintain critical expertise.
- Improve quality of products and services.
- Improve strategic alignment.
- Improve and empower teams.

This new policy considerably extends the ongoing process of Corps organizations changing to adapt to new demands. It also implements an

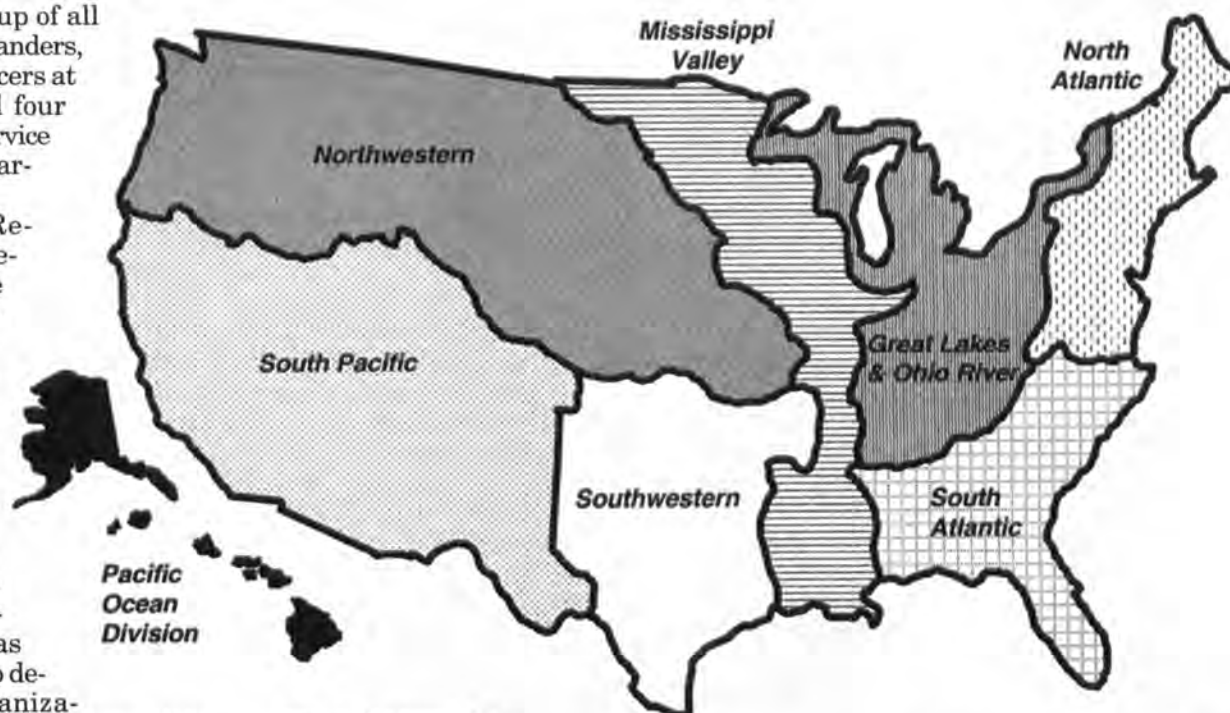
important aspect of the Division as a Business Center concept. This concept, adopted by the Corps' Board of Directors in February 1998, recognizes that the Corps can best deal with fluctuating workloads and personnel constraints by balancing resources across an entire division. (The Board of Directors is headed by the Chief of Engi-

neers and is made up of all eight division commanders, the four general officers at Headquarters, and four Senior Executive Service civilians at Headquarters.)

With Human Resources already regionalized by the Army, and Finance & Accounting regionalized by the Defense Department, it is clear that our major field offices are no longer self-contained. The new EC recognizes this and names the division commanders as the ones best able to determine their organizations' structure. The division will become the key management unit in the Corps' field structure.

The May 1996 ER on "Division and District Offices" (now superseded and under revision) described the organization and function of districts in nearly 40 pages of detail. The new EC, by contrast, specifies only six major functions that must be performed in all districts, and does not say how those functions will be structured. These six functions are construction, engineering, operations, planning, program and project management, and resource management. It will be up to division commanders where other functions can be best performed.

In most cases, people will not see dra-



matic changes from current organizations, although significant changes likely will occur over time. The new policy is intended to allow division commanders to adjust to changing business needs without appealing to Corps Headquarters for exceptions to some specified national structure.

### How it came about

In 1997, as one of the initiatives implementing the new Corps Vision, two divisions were selected to experiment with new structures and processes. South Atlantic Division and Southwestern Division each tried a variety of innovations. One of those

proposed by Southwestern Division became the "Division as a Business Center," officially approved by the Board of Directors in February 1998 for use in all divisions.

### An example

This new guidance is already bringing some early changes. For example, the Safety and Occupational Health Office (SOHO) at Headquarters recently held a task force meeting to review alternate regional structures for their function. As workloads and resources change, SOHO wants to be able to advise division commanders as the commanders deliberate how to structure capabilities in their divisions. SOHO is planning to help the commanders tailor safety alternatives for their divisions to enhance safety effectiveness across the Corps.

### Policy impacts

The Regional Business Center concept is potentially one of the most significant changes in Corps operations in many years. Already, each division has its own Regional Management Board (RMB) which periodically reviews, balances, and allocates resources to workloads.

In the short term, most people are likely to notice the effects of RMB decisions as work is allocated from one district to another in a division to stabilize capabilities and optimize output.

In the longer term, it is probable that some districts will become their division's specialists in certain functions, with other districts complementing them with their own specialties.

All changes will be implemented according to the principles at the beginning of this article, and with due regard both for legal and regulatory constraints, and for the impacts on our people. Over time, the result should be an organization better able to perform its future missions.



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## Military programs

Continued from page seven

ondary location to cover distinct geographic regions. Primary ISO locations are:

**North Atlantic Division** -- Fort Hamilton;

**South Atlantic Division** -- Savannah District;

**Southwestern Division** -- Dallas/Fort Worth;

**Great Lakes and Ohio River Division** -- Louisville District;

**South Pacific Division** -- Sacramento district;

**Northwestern Division** -- Kansas City District; and

**Pacific Ocean Division** -- Honolulu District.

Staffing will initially include staff from the former Center for Public Works, which is contributing about 20 people. Other positions may be filled, but each field division can use some of the resources as a "checkbook account" to assist the ISOs in serving their customers either through contract support, personnel targeted to specific projects, or other types of installation support.

"We built this plan to give both our customers and our divisions the maximum flexibility to provide excellent support," Allaman said.

The ISO staff members have just completed four weeks of intensive training to ready them for their new roles. They will soon arrive at their new locations and begin to provide installation support as part of regional teams.

### Where is it now?

"Both General Ballard and General Hunter made it clear that we aren't going to lose track of services our customers need and care about," Allaman said. "The Installation Support Center and the ISCX are working together to ensure that we establish a closely linked virtual team for installation support that makes seamless communication easy at all locations, whether that's the Installation Support Division, ISCX, or one of our ISOs."

"We also are making strong efforts to ensure all our installation custom-

ers and other players in the installation support business know where to find the services and the people they rely on."

"This reengineering effort exemplifies both the one-door-to-the-Corps and the virtual team concepts General Ballard has been emphasizing," Allaman said.

"In today's Army, we can't afford specialized agencies with full support staffs to carry out a mission like installation support. We have to think as one team, put together organizations that are more like networks, and build on resources we already have."

"Now, we truly will have a circle of seamless support to our DPW partners on the engineer team," said Allaman. "From Headquarters, where we will assist with the entire infrastructure life cycle, to the Installation Support Offices, which will find the best mix of resources and responses to execute installation needs, we will support our customers with the best we have to offer, worldwide!"



# Laboratory restructuring continues

By Billy Bridges  
Waterways Experiment Station

Phase I of the transition of the U.S. Corps of Engineers' research and development (R&D) organization into a more efficient and focused centralized (but dispersed) command is on target for completion this fiscal year.

The Corps is already recognized as having one of the best R&D organizations in the Department of Defense (DoD). Corps labs won both the large and small categories of the Army Research Organization of the Year awards last year. To keep that edge, Lt. Gen. Joe Ballard, Chief of Engineers, issued a permanent order last Oct. 1 establishing the U.S. Army

Engineer Research and Development Center (ERDC). This positions the Corps to be a leader in R&D well into the next century.

Before the re-organization order, the Construction Engineering Research Laboratories (CERL), Cold Regions Research and Engineering Laboratory (CRREL), Topographic Engineering Center (TEC), and Waterways Experiment



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Station (WES) operated as independent organizations. There are eight unique technical laboratories at the four dispersed laboratory sites.

The ERDC command headquarters is located at the Waterways Experiment Station in Vicksburg, Miss.

"Our goal is to re-align this already successful organization into a single entity that reflects the Corps' vision to revolutionize effectiveness, seek growth opportunities, and invest in people," said Col. Robin Cababa, ERDC commander. "This new structure will allow us to reduce the cost of doing business, improve coordination and teamwork, and provide 'one-door' access and increased responsiveness to our customers."

## Business functions combined

The major business functions at the four Corps R&D sites have been combined into one management

structure, and senior civilian staff have been assigned as chiefs for each functional area. The management team for business functions is distributed among the four sites. Functional chiefs are visiting all sites, as well as participating in staff video teleconferences being held bi-weekly.

"Today's communications technology transcends the past limitations of space, location, and time, allowing us to conduct business effectively across a distributed command," said Cababa. The combined administrative and support staff at all ERDC sites totals 264 personnel.

## Program Integration Office

The former commanders of CRREL, CERL, and TEC have been assigned to the Directorate of Research and Development in Headquarters as the Program Integration Office. These Program Integration Officers will operate from their laboratories and will help coordinate customer outreach efforts and provide specific points of contact for the ERDC's major customers.

Their major mission is to help define customer requirements, facilitate technology transfer from the corporate perspective, and be advocates for the customer. Col. Gary Thomas at TEC and Lt. Col. John MacLeod at CRREL will emphasize military engineering, and Col. James Walter at CERL will emphasize infrastructure and environment.

## Technical areas

Phase II is focused on re-engineering the technical side of the ERDC organization. Eight major R&D technology mission areas have been identified, and teams from ERDC and Headquarters are developing "macro-plans" to provide a more corporate strategy for these critical technical/mission areas.

These macro-plans are "works-in-progress" that will evolve during fiscal year 1999 (FY99) to provide ERDC with a more corporate investment strategy in critical mission areas, a non-structural means to increase horizontal R&D program integration and execution, and better alignment with the Corps' Vision and priorities for future operational capabilities.

The eight critical technical/mission areas and study team leaders are:



Physical models still provide a major amount of research data at Corps labs. (Photo courtesy of Waterways Experiment Station)

**Basic Research** -- Dr. Barbara Sotirin;  
**Environmental Quality** -- Dr. Robert Engler;  
**High Performance Materials and Systems** -- Dr. Bryant Mather;  
**Infrastructure Asset Management and Delivery** -- Dr. Michael O'Connor;  
**Military Engineering** -- Dr. William Marcuson;  
**Topography, Imagery, and Geospatial** -- Dr. William Roper;  
**Water and Sediment Management** -- Dr. James Houston; and  
**Information Technology** -- Dr. N. Radhakrishnan

The macro-plans will span multiple labs and sponsors and will allow the Corps to leverage all resources to give customers a better product. "This process is an opportunity to build a sound team relationship across the labs in each mission area," said Dr. Ed Link, Director of Research and Development. "Make no mistake, we will look at all pragmatic options in an endeavor to get more total horsepower out of the R&D engine."

The management of R&D efforts in the eight individual laboratories will remain the responsibility of that lab director. The basic mission areas and types of work executed by each lab will not change; however, there will be more programs that involve leveraging capabilities through inter-lab teams.

## Savings

Link emphasized that the ERDC has already made progress toward DoD goals of improving efficiencies and reducing costs. DoD laboratories are required to achieve a 25 percent reduction in costs by 2005. As of Oct. 1, the ERDC has reduced the staffs of its business functions by 14 percent, and a total of 22 percent savings is projected. Consolidating laboratory physical plant has already achieved an annual savings of \$1.5 million.

The target for completing the technical planning study and the recommendations for a fully integrated organization is July. Complete re-engineering/consolidation of the eight technical laboratories and related business functions under ERDC is scheduled to be completed in FY00.



The Topographic Engineering Center develops means of digitizing and accessing terrain information. (Photo courtesy of Topographic Engineering Center)



# Corps-wide cooperation repairs lock

By Carol Massar  
Chicago District

The Chicago Harbor Lock, built in the 1930s, leaked and creaked. But the age of the lock and its original design posed some serious repair problems.

Repairing the lock was a vital job that had to be done right. It was originally built to control the diversion of water from Lake Michigan, and to prevent the backflow of the Chicago River into the lake. And the work had to be done quickly, because the lock is one of the busiest in the country. More than 60,000 vessels pass through its chamber annually, so repairs had to be done during the boating off-season.

To repair the lock, Chicago District needed unique equipment, parts, labor, and expertise, and they needed them fast. So they opened their door to the entire U.S. Army Corps of Engineers to find the right resources to get the job done.

Rock Island District provided specialized equipment and labor, the Army's Rock Island Arsenal (RIA) provided unique parts, Detroit District provided bulkheads, Jacksonville District designed a lifting beam and provided contract administration, and Louisville District provided contracting support.

Working with Chicago District and private contractors and consultants as a team, these Corps resources completed Phase I of the project, repair of the west gate, ahead of schedule and under cost estimates. Phase II, repair of the east gate, is currently under construction.

Calling on Corps resources solved some serious problems that would otherwise have significantly delayed crucial repairs and cost more. One big problem was that virtually all repair parts had to be custom-built because of the lock's unique design. Delivery from private contractors would take up to two years, possibly longer.

Because repairs to the operating mechanism couldn't be delayed that long, Chicago District turned to RIA to fabricate the parts.

RIA built replacements for worn parts of the lock gate upper hinges, including the 21-inch hinge ball which weighs 950 pounds, a foot-long lock nut, and a "bolt" that's five feet long and weighs more than half a ton. RIA also made the rollers for the bottom of the gate. The roller assemblies have 16-inch-wide wheels that support most of the 265,000-pound sector gates as they open and shut.

During the project, workers could not remove the gate upper hinges without destroying the hinge shaft. But the shaft was not among the parts originally ordered because they thought it could be re-used. Commercial vendors/contractors were not interested in building just one part, but RIA responded to the emergency order.

They built a slightly modified workable part in three weeks, saving Chicago District considerable time and money. All parts needed were delivered on time to meet the installation schedule.



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The bulkhead lifting beam designed by Jacksonville District swings into action. (Photo courtesy of Jacksonville District)

Another problem was that, because of the age and original design of the lock, a unique modern dewatering system had to be installed and tested for the gate bays. This involved placing steel bulkheads into slots cut into the lock walls to dam off the waters of Lake Michigan on the east and the Chicago River on the west.

Rock Island District's Illinois Waterway Project Office solved the problem. They provided divers, crane operators, electricians, lock and dam repairers, equipment operators, equipment mechanics, welders, and towboat operators. They mobilized towboats, cranes, barges, pumps, generators, scaffolding, and hoists, placed 250 tons of concrete block ballast on the floor of the gate bay, and readied 11 bulkheads on barges.

The bulkhead lifting beam presented a problem during the 1997 dewaterings. The existing tubular steel truss lifting beam cracked lifting the 32-ton bulkheads. Although it had been repaired, the crews had little confidence in it. Enter the Corps' Metallurgy & Welding Engineering Support Center in Jacksonville District. The center maintains metallurgy and welding expertise for engineering design, inspection, and evaluation of steel structures at civil works projects.

Erich Reichle and William Wigner, structural engineers in Jacksonville District, designed a new lifting beam. They found the old beam had cracked due to the large number of welds made during its construction, and the brittleness of its metal.

Reichle's and Wigner's new design was simple. Two I-shaped beams were the main load-carrying members, which eliminated the need for significant welding. They designed the I-shaped members to match the old beam's geometry so that latching mechanisms and many other parts could be salvaged and re-used.

Chicago District needed the lifting beam quickly to keep up with their tight maintenance schedule. The innovative design kept costs under \$100,000, allowing a quicker service/supply contract method to be used.

When the bulkhead lifting beam arrived, the crew started placing bulkheads into the slots. They completed the test dewaterings and surveys of work 9-12 months before the scheduled repairs. When the repairs were made, they replaced gate rollers, refurbished the upper gate hinges, resurfaced the gate roller tracks, and renewed the gate seals.

Repairs to Chicago Lock's west gate bay were completed April 1, 1998, more than two weeks ahead of

schedule. Customers of Chicago Lock were not inconvenienced because work was accomplished in the boating off-season.

Identical work is currently under way at the east gate bay, and should be completed in time for the beginning of boating season on April 15.

(Erich Reichle and William Wigner, professional engineers in Jacksonville District, contributed to this article.)



In the two photos above, Corps personnel use muscle and machines to move bulkhead segments into place. (Photos courtesy of Chicago District)



# Savannah District dredges vital harbor

Article by Alicia Gregory  
Photos by Jonas Jordan  
Savannah District

Savannah Harbor is essential to both the economic health of the region and to the nation's military operations. And because it is a federally authorized navigation channel, Savannah District is charged with managing and maintaining the harbor.

"The federal government has been involved in maintaining the harbor since 1824, when the goal was to provide a 22-foot channel," said Alan Garrett, manager of the district's Navigation Section. "The shoaling processes at work in the harbor constantly seek to establish the natural depth of about 15 feet below mean low water. If the Corps' annual maintenance program were curtailed, the entire harbor would be impassable for the majority of the vessels now using the Georgia Ports Authority, and at many of the privately-owned industrial berths."

"Many companies, and the jobs they provide, depend on the vitality of the harbor," said Charles Sutlive, executive director of the Savannah Maritime Association. The association is a consortium of harbor users. "About 12-to-15 ships come through the harbor every day, and most of those are container vessels that are either shipping out material, like clay and wood products, or bringing in freight from overseas for companies like Home Depot."

"The harbor is strategic to the nation's ability to mobilize troops and military equipment around the world," said Garrett. "The 3rd Infantry Division at Fort Stewart and the Aviation Brigade at Hunter Army Airfield depend on the harbor's ability to accommodate fast sealift ships to rapidly deploy to critical missions overseas."

## Dredging operations

The district's Navigation Section manages dredging contracts using hopper dredges and hydraulic cutterhead pipeline dredges. Hopper dredges trail suction arms along the bottom, vacuuming material into the ship. It then transports the material offshore for disposal. Hydraulic cutterhead dredges pump dredged material through pipelines to containment areas. The district's inspectors oversee contractor safety and work performance.

"Right now we have an authorized project depth of 42 feet for the inner harbor and 44 feet for the entrance channel across the ocean bar," said Garrett. "The entire channel is 32.7 miles long and keeping it maintained requires constant monitoring and dredging. Rarely does a month go by when there is not a dredge working in the harbor. It's an endless cycle."

"Since deactivation of the Tide Gate structure and associated sediment control works, we have returned to the shoaling regimes seen when Savannah was first established," said Garrett.



About 12 to 15 ships pass through Savannah Harbor daily, and the port generates more than \$23 billion in revenue.



Alan Garret (right), Savannah District's Navigation Manager, explains cutterhead dredge operation to Charles Sutlive, Executive Director of the Savannah Maritime Association.

"The 7.5-foot tidal range allows a large amount of sediment-laden salt water to interact with the fresh waters coming from upstream. The result is a high incidence of shoaling in a zone between Talmadge Bridge to just downstream of Old Fort Jackson. We're also seeing higher rates of shoaling upstream of the bridge."

The total yearly budget for the district's active maintenance-dredging program is \$20 million, which includes dredging Savannah Harbor, Brunswick Harbor, and Kings Bay. The dredging program's total budget for Savannah Harbor ranges between \$12 to \$14 million per year, compared

to the \$8 to \$9 million in previous years. The funds are budgeted two years in advance and have until recently been appropriated by Congress using proceeds from the Harbor Maintenance Tax Trust fund. (This fund has recently been declared unconstitutional.)

"In an era of declining federal budgets, local support for the project has proved crucial to maintaining the level of service desired," said Garrett.

A 1997 economic impact study estimates that Georgia's public and private terminal operations directly or indirectly support 80,100 jobs, are responsible for \$1.8 billion in wages, gen-

erate \$23 billion in revenue and account for \$565 million in state and local taxes each year.

The Georgia Ports Authority (GPA) is conducting a feasibility study to determine if improvements at Savannah Harbor are justified. This study is being conducted under the authority of Section 203 of the Water Resources Development Act of 1986, which allows non-federal interests to fund and conduct feasibility level studies. Section 203 studies must meet all applicable federal requirements for a harbor improvement feasibility study.

## Environmental impacts

"With any improvements to the harbor, even maintenance, we monitor the impacts to the environment," said Garrett. "We cannot dredge the harbor without the environmental agencies' concurrence on our management plan. There are times of the year, for example, when we can't dredge because of the sea turtles. That's why we use the hopper dredge between December and March, when the water is cold, because sea turtles don't like cold water."

"The impact to Savannah without the maintenance dredging would be pretty great," said Sutlive. "A strong viable port helps attract industry. If we had a second-rate port, they wouldn't want to be here. The port and new industries are tied together, because for many of these industries a good portion of their business is international. To keep the port operable, we have to have maintenance dredging."



# Contracts serve Army medics nationwide

Article and Photo  
By Anita Horky  
Fort Worth District

When the Army's Medical Command (MEDCOM) wanted a special job order contract available for its facility managers, it knew where to turn, and Fort Worth District was happy to serve the Army. Now, the district administers two medical job order contracts (MEDJOCs) for minor construction and repair jobs at Army medical facilities across the nation.

MEDJOCs are a versatile, low-cost construction option. Like regular job order contracts, they use a unit price book to establish competitive, firm-fixed prices and deliver a project faster than traditional design-bid-build contracts. But the MEDJOCs have been designed specifically for medical facilities.

The MEDJOCs' unit price book contains medical-specific items, and the contract requires that the contractor's key employees meet rigid qualifications, including substantial experience in medical facilities work.

"The district worked closely with the folks at MEDCOM to tailor the MEDJOCs to the needs of the medical facility managers," said Al Khatena, who heads the district's MEDCOM Support Team that administers the contracts.

J&J Maintenance, Inc., of Austin, Texas, is the contractor for both MEDJOCs -- one serves the northern part of the U.S. and one serves the south. J&J has a national presence with established medical contracts.

The contractor's experience, combined with the district's responsive MEDCOM Support Team, has earned the praise of customers.

Eoy Hirschak, facilities manager for Brooke Army Medical Center in Texas and facility director for the Great Plains Regional Medical Command, is using the MEDJOCs for a variety of construction projects.

"The beauty of this is it's more geared to medical," Hirschak said. "In the medical world, you have a problem with timeliness and you have to be aware of the environment. If you do something like turn off the electricity, you could affect someone's life. Having a contractor with medical experience is good."

Tom Dimmer, facilities manager for Darnall Army Community Hospital at Fort Hood, Texas, said he recommends the MEDJOCs for two reasons -- the contractor and the district's MEDCOM Support Team.

J&J provides a "good, qualified, dedicated effort and is familiar with the complications of working in a medical environment," said Dimmer, who has used the MEDJOCs for construction at the hospital as well as troop medical clinics. "The Fort Worth team understands our need for good responsiveness and they're supporting us real well with that."

The team's emphasis on satisfying the customer has meant repeat cus-



Medical job order contracts offer a versatile option for minor construction and repairs at Army medical facilities.

tomers, Khatena said. In fiscal year 1997, the first fully operational year for the MEDJOCs, the MEDCOM Support Team handled only \$4 million in construction because of limitations set by MEDCOM. With those limits now lifted, that amount has almost tripled for fiscal year 1998.

The MEDCOM Support Team (made up of a leader, three project engineers,

a contracting officer, a procurement/payroll technician, and an administrative assistant) is currently working on more than 70 projects at Army posts all across the country, from nearby Fort Hood, Texas, to Fort Wainwright in Alaska and Fort Meade in Maryland.

"We're looking at doing \$15 million in construction this year," said Khatena, who anticipates adding three

additional project engineers to the team. "Next year, I don't see us having a problem doing \$20 million worth."

Much of the additional business is through word of mouth. Khatena has spent the last several months pitching the MEDJOCs to all medical facility directors and managers who will listen. One of them is Barney Richmond, facility director for the Western Regional Medical Command. Richmond is using the MEDJOCs at Madigan Army Medical Center at Fort Lewis, Wash., after hearing Khatena's sales pitch. While the work plans have just been developed, Richmond has high expectations.

"This is going to work well," Richmond said. "I know you have a good contractor. I know J&J and the quality of their work. I also know the people involved, and they wouldn't let it happen any other way."

"Our customers, the facility managers, have many options from which to choose to get their work done," Khatena added. "But what is clear is that those who have tried our product, like what they got and have come back for more. As long as we deliver the product we told them we would, they will keep coming back for more."

## Volunteers build Corps showers

By Barbara Cravens  
Tulsa District

Campers and fishermen visiting Tulsa District's Fall River Lake in southeastern Kansas will soon reap the benefits of an extraordinary volunteer effort. Harold Rodman and a group of volunteers have been building two shower houses at the Fall River recreation areas.

In 1997, Rodman told Cleon Linton, the Fall River Lake manager that he wanted to see a shower house on U.S. Army Corps of Engineers land for campers and fishermen to use. When Linton told Rodman that such a building was beyond the lake staff's budget, Rodman offered to seek volunteer labor and donations to build a shower house.

"Offers like this don't come by every day," Linton said.

For Rodman, a retiree from Wichita, Kan., helping others do what seems impossible is a life-long practice. "I was raised with the understanding that if you help me, I'll help you," he said.

Once Linton got approval from the district office, Rodman began calling friends and neighbors to volunteer. The Tharp family's construction company donated concrete, sand, gravel, and manpower to pour the floor of the shower house. Professional masons Larry Hein and Terry McMullin volunteered to lay blocks, and a professional plumber offered his services free.

When it came time for donations of concrete blocks for the walls, both Rodman and Linton were surprised to see enough blocks for not one but two shower houses. Plans were made to



Volunteers complete the roof of the Falls River Lake shower house. (Photo courtesy of Tulsa District)

build a shower house at Whitehall Bay, another recreation area at the lake.

"Now we will have two shower houses, with little cost to the government," Linton said.

Construction began last spring. By early December, 90 percent of the blocks had been laid at the Damsite shower house, its roof completed, and fixtures donated. Slab and foundation work is complete on the Whitehall Bay shower house. The facilities will include four shower stalls and four flush toilets in 720-square-foot buildings.

Working weekends and evenings, volunteers hope to see the Damsite shower house in operation early in the 1999 recreation season.

"This has been an excellent working relationship," Linton said. "Mister Rodman worked throughout the summer and has been in charge of the construction, coordination and, essen-

tially, representing the Corps when working with the volunteers."

Rodman's determination and patience have been the focus throughout the building process. "I'm a hard-headed old man," he said. "If I didn't like doing this, I wouldn't do it."

He also credits his wife Joyce. Besides helping with construction and soliciting volunteers, Joyce prepares meals for the volunteers and has coffee, tea, and donuts ready when they begin in the mornings.

"Some of the volunteers have come out to help just because they know she's preparing the food," Rodman said.

Linton estimates that shower houses like the two at Fall River Lake would cost between \$80,000 and \$200,000 each. Rodman estimates that volunteers have raised between \$15,000 and \$20,000 in cash and material, and the labor has been free.





Technology has changed a great deal during the history of Vicksburg District. The woven willow mats of the 1800s (left) have been replaced by modern articulated concrete mats. (Photos courtesy of Vicksburg District)

# Vicksburg District celebrates 125 years

In 1873, Capt. William Henry Harrison Benyaure was a Medal of Honor engineer officer looking for a hospitable place to open modest engineer offices to oversee navigation improvements on rivers in the lower Mississippi Valley.

Little did Benyaure realize that, 125 years later, his little office would grow to be one of the nation's leading engineering agencies and establish Vicksburg, Miss., as the "Engineer City."

Back then, Vicksburg was a thriving, progressive river port, a scheduled stop for all steamboats traveling to and from New Orleans.

## Aftermath of war

"The U.S. Army Corps of Engineers first set up here at the close of Reconstruction," said Dr. Michael Robinson, historian and public affairs officer for the Mississippi Valley Division. (*Editor's note: Robinson died shortly after giving this interview.*) "Area rivers were in bad shape. Many, like the Red and Yazoo, were not navigable and the regional economy was still depressed after the Civil War. When Vicksburg was made the district headquarters, it was, in many ways, the dawning of a new era. The federal government had declared a national priority on restoring our nation's waterways."

## Territory

From Benyaure's first two projects on the Ouachita and Yazoo Rivers, the responsibilities for Vicksburg District have grown significantly. By 1891, the district was responsible for a 200,000-square-mile area which included parts of Tennessee, Mississippi, Louisiana, Arkansas, Texas, and Indian Territory (now Oklahoma).

Today, Vicksburg District covers 68,000 square miles in Arkansas,

Louisiana, and Mississippi. It owns, operates, and maintains \$2.3 billion in real property and project lands.

"History will record many of our accomplishments, but the two that will stand out involve our work on the Mississippi," Robinson said.

## Taming the Mississippi

No other Corps office along the Mississippi has done so much in developing the tributaries for navigation than Vicksburg District. The district also developed the articulated concrete mats and revetment process used to protect the banks of the Mississippi River from erosion.

"The whole mat sinking unit we use today grew from experiments conducted in Vicksburg District before World War I," Robinson said. "In my opinion, the mat was a huge development that still draws international interest."

Other important navigation efforts included the recent \$1.8 billion J. Bennett Johnston Waterway, navigation systems on the Ouachita and Pearl rivers, and historic works on the Yazoo.

Along with its initial mission to provide reliable navigation on area rivers, the district has added missions of flood control, hydropower, recreation, water supply, emergency operations, environmental restoration, and support for federal and other agencies.

## Value

Its personnel have also been actively involved in most important military actions from World War II to Bosnia,

and Desert Storm; including high-profile engineering missions such as the Saudi Arabia construction program and engineering support to the Niger River basin.

"Every Vicksburg District project has, over time, paid for itself," said Michael Logue, district Public Affairs Officer. "Our flood control projects have returned \$8 for every \$1 spent and to date have prevented more than \$47 billion in flood damages."

Other important returns are \$26 million in hydropower produced annually, a billion-dollar annual recreation program on 10 area lakes and rivers, and navigation works that return \$20 for each dollar spent.

"Our recreation program alone returns to communities six or seven times the money we have in our total annual budget," Logue said.

The Corps' civil works projects are among the few federal programs that must pass a benefit/cost analysis before they are built. This analysis ensures that civil works projects are only built if they will benefit the taxpayer. The environment also receives heavy consideration in Corps civil works projects today, much different than in Benyaure's day.

## Environment

"In the district's first 100 years, the concern was on a strong economy, which means a strong military and national survival," Logue said. "That was critical to a young nation and one facing world threats for more than 200 years. Those concerns, while still valid, are now balanced with threats to our environment."

"Corps projects carry an equal emphasis on economic growth and the environment," Logue said. "The goal of today's projects is no net loss of environmental habitat, and now recent legislation allows the Corps to conduct projects to even restore the environment."

Two examples of past environmental projects are the restoration of water quality in Arkansas' largest natural lake, Lake Chicot, and the restoration of important waterfowl habitat in the Yazoo River National Wildlife Refuge.

## River expertise

"Over time, Vicksburg has become the center of river engineering in the world both in terms of the work on the Mississippi and tributaries and the large research agenda which has evolved at the Waterways Experiment Station," Robinson said. "There is no place on Earth where there is as much expertise on river engineering."

This led to Vicksburg's recognition as the city with the nation's highest number of Ph.D.s per capita.

## Celebration

The district hosted a 125th anniversary celebration on Dec. 16 in their headquarters in Vicksburg. Mississippi Governor Kirk Fordice, a one-time contractor for the district, said, "If everything we know is destroyed by man or act of God, you can give these people (Vicksburg District) a slide-rule, and they can have it up and running in no time flat."

Quite a legacy.

(Michael Logue, Public Affairs Officer of Vicksburg District, and Dr. Michael Robinson, former Historian and Public Affairs Officer of Mississippi Valley Division, both contributed to this article.)

**"There is no place on Earth where there is as much expertise on river engineering."**



# Storyteller continues old traditions

By Ann Marie Reyes  
New England District

There are few people who don't love a good story. Stories can take you to worlds both real and imagined. Through them, one can become a hero or a villain. People get swept up in stories and imagine that they are saving the day or causing mischief.

Jo-Ann Dawber, an office automation clerk in Engineering-Planning, not only loves a good story, she loves to tell them. She began storytelling in 1994. It was an extension of her role-playing hobby with the FALO (Fantasy and Legend Organization), which she has belonged to for 10 years.

"In medieval times, bards, or storytellers as they were also called, would travel from town to town and pick up bits of information from each place he or she visited," said Dawber. "For the price of a meal and some ale, a storyteller would tell the people all the latest news. After a couple of pints of ale, the storyteller would then tell his or her own embellished story of their adventures on the road."

So storytelling was used primarily for news of surrounding towns, and also for entertainment. It was also a way to warn children about the dangers of everyday life.

"The moral of the Irish folk tale, 'Jenny Green Teeth,' is to teach children not to go to near rivers and lakes," said Dawber. "There are many stories with a moral like that. That was a way for adults to communicate to children how to stay safe. I believe part of telling children to beware of the enchanting fairy folk was to stay away from strangers that were being nice and asking you to go somewhere with them."

In keeping with the storytelling tradition, Dawber charges only a meal to do her storytelling. "If I'm asked to tell a story at the local library or for a group, I usually get a gift certificate to a restaurant," she said.

When telling a story, Dawber becomes Gwen Far McDougal, a strong-willed Scottish woman who is not afraid to say what she thinks.

"I developed her at King Richard's Faire," said Dawber of Gwen. "She's the character I become when I work at fairs, either storytelling or working a booth. She's the one who makes money."

Gwen is not the only role Dawber plays. When role-playing in FALO once a month, Dawber becomes Lady Laurel Angelica, a fairy queen. Dawber is an important member FALO. She has written the by-laws for story lines involving fairies or elemental magic and approves references in story lines on both subjects. "I get a lot of e-mails," Dawber said. "Artistic people are extremely sensitive, so sometimes I not only have to approve references, I also have to be a diplomat."

Dawber said role-playing is a great adventure, but some people get too engrossed. "It's a great stress relief, a lot of fun, and sometimes it can build up your self-esteem," she said. "But it's important to stay focused. It is only entertainment. I definitely keep work and hobby separate."

A government employee since 1989, Dawber is focused on both real life and on her future. She is a great lover of books, and her life's dream has always been to become a librarian. She is currently going to school to realize that dream. When asked what role-playing and story telling held for her future, Dawber replied, "It will always be part of my life."



Jo-Ann Dawber becomes Lady Laurel Angelica when she joins the role-playing enthusiasts of the Fantasy and Legend Organization. (Photo courtesy of New England District)

## 'I recreate the natural world with paint'

Article and Photo  
By Jen Rodriguez  
Baltimore District

For Valerie Thurmond, painting is more than a hobby. It is the medium she uses to intensify the color and contrast that photographs fail to capture. And she has achieved a measure of fame by being featured in an art gallery in Baltimore.

A geologist in the Engineering Division of Baltimore District, Thurmond plans her themes from observations and photographs. She draws half a dozen thumbnail sketches before loading her paintbrush with acrylic paint.

"I recreate the natural world with paint," said Thurmond. Painting the sky on the stretched canvas first helps to determine the color of the water. Then she adds the landmasses in the background, fills in the water, the focal point, and the details. She signs her name last.

"It takes 12 to 20 hours to complete one piece, from the painting to building the frame," said Thurmond. "It's a total escape, and I lose the awareness of time."

A native Californian, Thurmond sketched pictures as a child, but her inspiration to paint didn't develop until she took a scuba diving class in high school.

To capture the beauty and gracefulness of the gray whale, she photographed one during a diving excursion,

but she discovered the photos masked the natural colors of the sea.

"The feel of the sea and its vivid colors were totally lost in final print," Thurmond said. "The colors needed to be cranked up with more contrast, so I worked on making this happen through my paintings."

Since those early days of painting sea life, Thurmond has painted several lighthouses from Miami to Baltimore,

including Key Biscayne in Miami, Gay's Head at Martha's Vineyard, Craig Hill at the mouth of the Patapsco River, and the 1855 Sevenfoot Knoll in the Inner Harbor. She also painted the Poole's Island Lighthouse, the oldest standing beacon on the Chesapeake Bay near Aberdeen, Md., before its restoration in 1996.

"Lighthouses are my favorites to paint because they are the guardians

of the water," Thurmond said. "Painting them helps to preserve their history."

Another favorite subject is the blue herons she has seen at Aberdeen Proving Ground, Md.. According to Thurmond, the birds are very tame, so it's easy to get close enough to see the intricate details of their wings and bodies.

For Thurmond, living in a waterfront home that overlooks the Chesapeake Bay and working for the Corps have advantages. "I'm fortunate to have a position that gets me to unique places where I can find neat topics," she said. She gathers drawing ideas from the front window of her home overlooking the bay, and from observing work sites, such as boats on the Sassafras River and geophysical work at the Bay Bridge.

Thurmond comes from a family of artists. Her great-grandfather Emile Lauwers painted colossal murals in Belgium, Italy, and Holland, and French cathedrals before bringing his family to America. Her goal one day is to paint portraits but, for now, Thurmond is ecstatic about her newest accomplishment, becoming January's featured artist at the Watermark Gallery in Baltimore.

"The show has allowed me to get my foot in the door and that's exciting," said Thurmond. "It makes me proud to be recognized for something I enjoy doing."



Valerie Thurmond, January's featured artist at Watermark Gallery, stands in front of "Day Off," one of her paintings on display at the gallery.



# Around the Corps

## Hammer Award

The Mandatory Center of Expertise for the Curation and Management of Archeological Collections in St. Louis District won Vice President Gore's Hammer Award for setting up a national curation inventory and national evaluation of museum partnerships for the Department of Defense (DoD).

The award is a framed hammer, a humorous reference to the \$400 hammers of past years.

The district team (archeologists, anthropologists, and museum specialists), coordinated a national effort to assess DoD's archeological collections. Using the data, the team has begun to identify potential partners who can permanently curate these collections.

Over the years, the Corps and each of the armed services have amassed extensive archeological collections, but there was no comprehensive program to ensure their long-term care and storage. Overall management and care was decentralized, funding was intermittent for each facility, and materials were often inaccessible to the public and scientists.

In 1992, the Corps designated St. Louis District as the archeological center of expertise. In 1994, the Deputy Under Secretary of Defense for Environmental Security saw the need for a national inventory of collections throughout DoD. The Deputy Under Secretary formed a partnership with the Corps to accomplish this national inventory and evaluation.

By consolidating the collections, their administration and the cost of care and management is greatly reduced. The collections can be studied and evaluated together, forming a cohesive story of our national heritage, and the artifacts will be properly preserved for future generations to study and enjoy.

## Computers donated

New England District (NED) has donated Pentium computer equipment to the 101st Airborne (Air Assault) at Fort Campbell, Ky. Forty-two monitors, 34 central processing units, and 19 keyboards and mice were given to the 101st during their three-day visit to NED Dec. 14-16.

Besides computers, the district also transferred office furniture and other equipment to enhance mission operations and quality of life for the soldiers. The 101st is tentatively scheduled to return in coming months to pick up the district's remaining excess Pentium computers.

## Corrections

The Corps' emergency power planning and response teams (PRT) provided power to Puerto Rico, along with the 249th Engineer Battalion (Prime Power) (January *Engineer Update*). The emergency power PRT from Philadelphia District was the first PRT to

arrive in Puerto Rico.

Steve Arcone wrote the article titled "CRREL people help stranded aircraft" in the February *Engineer Update*.

The National Imagery and Mapping Agency's new building is its printing facility, not its headquarters as reported in the February *Engineer Update*.

## Logistics contract

On Feb. 19, U.S. Army Europe (USAREUR) and the Corps awarded a contract for continued logistics support to U.S. forces in the Balkans. The one-year contract, with four one-year options, will become effective May 28.

Under the contract, Brown & Root Services will provide life support and transportation and maintenance services for U.S. forces in Hungary, Croatia, and Bosnia in support of Operation Joint Forge. Transatlantic Programs Center awarded the multimillion dollar contract for USAREUR, which is responsible for military operations in the Balkans.

## 3-D model

Albuquerque District developed a three-dimensional model of a new Nuclear Weapons Integration element for the Air Force Material Command.

Jim Davis, Facilities Design Section, developed the modeling of the 36,000-square-foot building using a basic microstation program. "It shows all the streets, surrounding buildings and landscaping," Davis said. "It makes it more of a reality for the user to see it

this way rather than just looking at a flat sheet of paper."

Besides a 3-D modeling, Davis also created a "fly-through" which shows a panoramic view from all sides of the building as if you were in an airplane flying around the facility.

The \$6.8 million building will provide a modern workplace for about 100 people to safely and efficiently track the storage of nuclear weapons.

## Rescue

The crew of the hydrographic survey vessel *Boyer* in St. Louis District recently rescued three fishermen.

The crew was conducting an out-draft study about a mile upstream from Lock and Dam 25 on the Mississippi River near Winfield, Mo., when lockman Roger Groner radioed for an emergency rescue of a boat that had lost its steering. The current from the open tainter gates was drawing the boat dangerously close to the dam.

The *Boyer* crew secured their in-water survey equipment and made a high-speed run to catch the vessel about 200 feet from the dam. The crew then locked through and towed the disabled boat to the nearest docking facility. This was the second rescue that the *Boyer* crew performed in 1998.

## Well equipment

Far East District has a new well drilling rig, two truck-mounted 10-ton pump hoists, and a trailer-mounted exploratory boring rig. The district's

Foundations and Materials (F&M) Branch uses this equipment for foundation investigation and water well field activities. Another well drilling rig and a truck-mounted exploratory boring rig will arrive in April.

This equipment replaces existing rigs that are obsolete and difficult to maintain after years of service.

"We've been in the foundation drilling and groundwater development business for over 34 years," said Douglas Bliss, F&M Branch Chief. "With state-of-the-art field equipment, the district has entered an exciting period of enhanced geotechnical services for our U.S. Forces Korea customers."

F&M Branch maintains 250 water wells on 50 military installations across the Republic of Korea. These wells deliver about 16 million gallons of drinking water each day, at a yearly saving of about \$22.4 million less than the cost of municipal or hauled water. F&M Branch also builds five to 10 new water wells each year as demands for water supplies increase.

"Ten years ago, our wells were about 300 feet, but wells have recently been installed as deep as 800 feet," said Bliss. "With water tables dropping and potability diminishing from contamination, wells may eventually increase to 1,500 feet."

The new equipment offers technical and safety advances. With increased power and speed, soil and rock formations can now be drilled to 1,500 feet. The rigs can drill angle holes and large diameter borings, and have been outfitted for environmental investigations.

# Group recognizes engineer's work



Lt. Gen. Joe Ballard, Chief of Engineers and last year's Black Engineer of the Year, presents Annie Davis, a civil engineer with New Orleans District, a Special Recognition Award at the Black Engineer of the Year Awards Conference. (Photo by F.T. Eyre, Headquarters)

Annie Davis, a civil engineer with New Orleans District's Construction Division, received a Special Recognition Award during this year's Black Engineer of the Year Awards Conference in Baltimore.

"This award is given to the candidates whose qualifications and performance place them in the ranks of the nation's highest achievers in technology," said Tyrone Taborn, Chairman of Career Communications Group (CCG), a sponsor for the annual awards program and conference.

Davis joined the Corps almost seven years ago after earning her degree in civil engineering. Before that, she taught high school for more than 20 years. She is in charge of the construction of a major drainage improvement project in southeast Louisiana. Besides her official duties, Davis also serves on the district's Black Employment Program Committee, Federal Women's Program Committee, as an Equal Employment Opportunity counselor, and participates in the district mentoring program.

The 13th Annual Black Engineer of the Year Awards Conference was held Feb. 7-13, sponsored by CCG and the Council of Deans of Historically Black Colleges and Universities.





Even sitting by the curb, the Rapid Response Vehicle is impressive. The 36-foot custom aluminum body rides on an International Harvester chassis.

## Response van is a cool set of wheels

Article by Bernard Tate  
Photos by F.T. Eyre  
Headquarters

Years ago, in *Tom Swift and His Flying Lab* by Victor Appleton, the fictional young inventor built a hardware-packed laboratory in a jet aircraft that carried him on his globe-trotting scientific adventures.

The Rapid Response Vehicle (RRV) isn't as dramatic as Tom Swift's Flying Lab, but the concept is the same -- a vehicle packed with everything needed to put a U.S. Army Corps of Engineers team into action at an emergency site in 18 hours or less.

"In an emergency, if you're not organized and running smoothly from the beginning, you've got a mess," said Charlie Kemp, an information management specialist from Mobile District. Kemp, along with Eugene Bentz and David Fultz from Mobile District, manned the RRV displayed at Corps Headquarters Feb. 17-18.

The RRV is part of the Deployable Tactical Operations System (DTOS) which will give Corps teams an edge in dealing with the chaos of a disaster. An RRV is an International Harvester chassis and engine with a custom-built 36-foot-long body which can accommodate a staff of seven people or more. Its equipment includes laptop computers, office software, global position system equipment, digital cameras, phone and intercom system, satellite communications, cellular phone, radios (HF, VHF, and CB), drafting and mapping software, and wireless capability to network laptops within 200 feet of the RRV.

An RRV is completely self-contained with a bathroom, microwave oven, coffeepot, refrigerator, water tank, and an onboard 15-kilowatt generator. They are designed to last 15-20 years and are solidly built with a heavy-gauge aluminum body, industrial-grade floors, and cabinets built of solid oak and three-quarter-



A group of Headquarters people touring an RRV try out its workstations and communications gear.

ter-inch thick plywood.

"The RRVs are the jack-rabbits," said Kemp. "They can cruise at 70 miles a hour on the road. With one of these, a Corps team can arrive at a disaster site in 18 hours or less and be ready to go to work 45 minutes to an hour after they arrive."

There will be six RRVs, one each in Baltimore, Los Angeles, Portland, Fort Worth, St. Louis, and Nashville districts. Besides the RRVs, DTOS includes

six Emergency Tactical Operations Centers (ETOCs), trailers 37 feet long equipped as mobile offices. Each "set" will have a pair of ETOCs to provide work space for up to 30 people, and two Freightliner trucks to pull them. They will each be supported by an Emergency Communications Vehicle (similar to the RRV except with more communication capability), and an Emergency Support Vehicle to carry tools, office supplies, and whatever else the Corps team will need. One ETOC set will be stationed in Sacramento District, and two sets in Mobile District.

In addition, DTOS includes three Fly-Away Kits. The kits have the same equipment as the ETOCs, but packaged in containers and located in Honolulu, Jacksonville, and Japan Engineering districts for deployment outside the U.S.

DTOS is a quantum leap in the Corps' ability to respond to an emergency, according to Kemp, a veteran of hurricanes Mitch, Fran, Bertha, and Opal.

"We used to have three business-type trailers," said Kemp. "They did the job, but they were really slow. We'd have breakdowns or blow-outs every 200 miles. They had to be towed to the site, and they didn't even have a bathroom."

"Previously, each district was doing its own thing and none of it really worked together," Kemp added. "Now we have compatibility and common equipment throughout the Corps. Someone from Los Angeles can deploy to a disaster in Baltimore District and work out of their RRV without retraining."

"But it's not the equipment that does the job, it's the people," Kemp continued. "Without good, qualified people, you're in trouble."

Each district with an RRV will train a pool of people to deal with the disasters that are likely to strike that region. When an emergency occurs, the district leadership will select a Logistics Emergency Response Team to deploy with the RRV.